

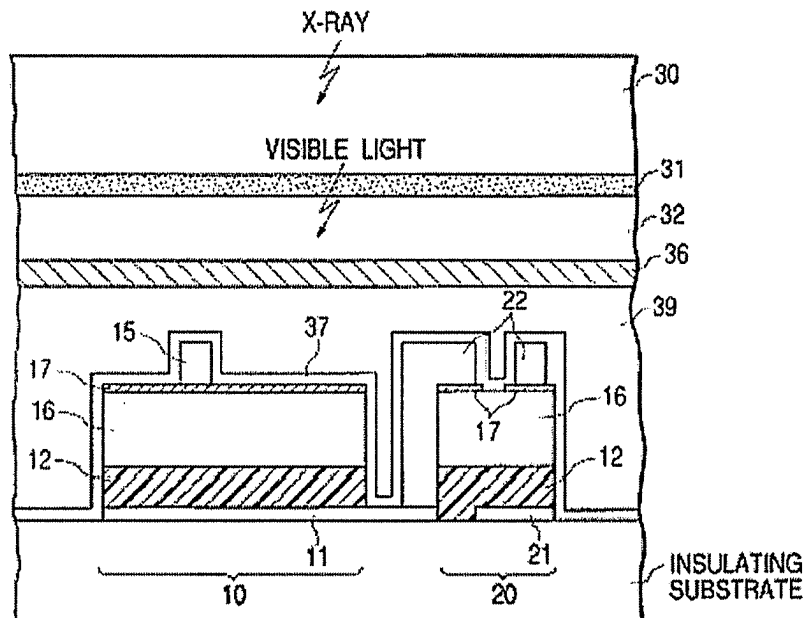
REMARKS

Claims 1-10, 12-13, 15, and 18 are pending. Claims 11, 14 and 16-17 have been cancelled. Claim 1 has been amended to include the subject matter of previously pending claims 16 and 17. Claim 6 has been amended to include the subject matter of previously pending claim 11. Claim 8 has been rewritten into independent form. No new matter has been added.

The Office Action rejects claims 1-2, 6-7 and 11-18 under 35 U.S.C. 102(e) as being anticipated by Ishii (U.S. Patent Application No. 2003/0010899). This rejection is moot as to claims 11, 14 and 16-17 which have been cancelled. Applicants respectfully assert that Ishii fails to disclose or suggest the features of claims 1-2, 15 and 18, which include the planarising layer being in direct contact with the electrode structure and the substrate. Further, Ishii fails to disclose or suggest the features of claims 6-7 and 12-13, which include the conversion layer being in direct contact with the moisture resistant layer.

Ishii is directed to an imaging apparatus that is intended to reduce reflection as the light passes through the device to the photoelectric conversion element. (Ishii par. 0009). The Office Action at page 3 with respect to previously pending claims 11 and 17 asserts that FIG. 5 of Ishii shows both the planarising layer being in direct contact with the electrode structure and the substrate, and the conversion layer being in direct contact with the moisture resistant layer. Applicants respectfully point out that FIG. 5 does not show these features of claims 1-2, 6-7, 12-13, 15 and 18, respectively. FIG. 5 shows the use of the intermediary layers of the mounting protective layer 32 and the TFT protective layer:

FIG. 5



Ishii's use of this particular arrangement of layers, and in particular the intermediary layers 32 and 37, is described as follows:

[0045] FIG. 5 shows a sectional view of a pixel in the present embodiment. In the photoelectric conversion element 10 and the TFT 20, the electrode layers 17 (n.sup.+ layers herein) of ohmic contact layers are laid on the semiconductor layers 16, and a TFT surface stabilizing protective layer 37, a planarization film 39, a moisture-resistant protective layer 36, and a mounting protective layer 32 as protective layers are stacked in the order named on the electrode layers 17.

[0046] **SiN-2 is used for the TFT surface stabilizing protective layer 37**, BCB (benzocyclobutene) for the planarization film, SiN-1

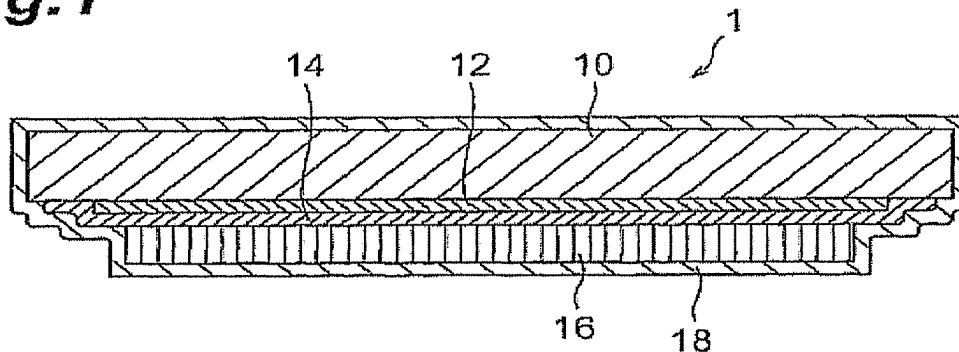
for the moisture-resistant protective layer 36, and **PI (polyimide) for the mounting protective layer 32.**

[0047] A photosensor consists of a plurality of pixels having the layer structure as described above, and a wavelength conversion element for converting radiation such as X-rays or the like into light such as visible light or the like, e.g., a phosphor layer 30 is bonded through an adhesive layer 31 to the photosensor. (Ishii paragraphs 0045-0047)(emphasis added).

The Office Action rejects claims 3-5 and 8-10 under 35 U.S.C. 103 as being obvious over Ishii in view of Homme (U.S. Patent Application No. 2006/0038131). Applicants respectfully assert that the combination of Ishii and Homme fail to disclose or suggest the features of claim 3-5 and 8-10. Claims 3-5 depend from claim 1 and include the feature of the planarising layer being in direct contact with the electrode structure and the substrate. Claims 8-10 include the feature of the protective stack including an outer cover.

As described above, Ishii does not disclose or suggest the planarising layer being in direct contact with the electrode structure and the substrate. Homme is directed only to a scintillator panel and discloses a polyparaxylylene layer 18 that can be positioned above a scintillation layer 16 and wrapped about the entire element including the substrate 10:

Fig. 1



Homme does not disclose or suggest a planarising layer being in direct contact with the electrode structure and the substrate as in claims 3-5.

The Office Action at page 4 concedes that Ishii does not disclose the protective stack including an outer cover as in claims 8-10 but asserts that it would have been obvious to modify the Ishii device with the wrap around film 18 of Homme to provide for complete resistance for the conversion layer against water vapor. However, Ishii teaches against such a modification. As described above, Ishii is an imaging device that is intended to increase efficiency of the light passing through the device to the photoelectric conversion element:

[0008] In the radiation imaging apparatus of this structure, there were increasing demands for achievement of higher sensitivity for the purpose of reducing radiation doses and other purposes, while the incoming visible light was reflected by the protective films and others, so as to cause optical losses, posing a significant issue in the achievement of higher sensitivity. Particularly, in the case where there are provided a plurality of protective films having their respective separate functions, the foregoing issue can be serious in particular.

[0009] **An object of the present invention is, therefore, to provide imaging apparatus and radiation detecting apparatus with high sensitivity on the basis of improvement in a configuration of protective films and others on the photoelectric conversion element to reduce the reflection caused by the films above the photoelectric conversion layer, in order to guide the light emission from the phosphor into the photoelectric conversion element efficiently.** (Ishii paragraphs 0008-0009)(emphasis added).

In pursuit of this objective, Ishii provides a specific arrangement of layers in the device having specific refractive indices:

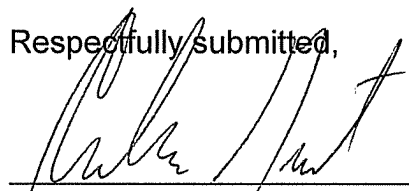
[0011] Another imaging apparatus according to the present invention is an imaging apparatus comprising a photoelectric conversion layer for converting incident light into charge, on an insulating substrate, an electrode layer formed on the photoelectric conversion layer, and a plurality of protective layers formed on the electrode layer, wherein relations of $n_a - n_b \leq 1.5$ and $n_b - n_{c1} \leq 1.5$ and $n_{c1} - n_{c2} \leq 1.5, \dots$, and $n_{ci} - n_{ci+1} \leq 1.5$ are met where n_a is a refractive index of the photoelectric conversion layer, n_b a refractive index of the electrode layer, and $n_{c1}, n_{c2}, \dots, n_{ci}$, and n_{ci+1} ($i=1, 2, 3, \dots$) are refractive indices of the protective layers in order from the side adjacent to the electrode layer. (Ishii par. 0011).

As such, Ishii teaches against the modification of adding another layer that is an outer cover over the conversion layer.

Accordingly, for at least the above-described reasons, withdrawal of the rejections is respectfully requested. Favorable consideration and early issuance of the Notice of Allowance are respectfully requested.

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Respectfully submitted,



Andrew C. Gust
Registration No. 47,620
Akerman Senterfitt
for David Barnes, Reg. No. 47,407
Philips Electronics North America Corporation
345 Scarborough Road
Briarcliff Manor, New York 10510
Telephone: 914-333-9693
Facsimile: 914-332-0615
File: NL030680US1